

NEWSLINE

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McTague lauds 'superb' year for labs

The Laboratory, along with sister labs Los Alamos and Lawrence Berkeley, were praised by UC Vice President John McTague for 'superb' science and technology.

By **Jeff Garberson**
UC OFFICE OF THE PRESIDENT

The University of California-operated national laboratories have had an outstanding year, producing "superb science and technology" while, for the first time, the quality of manage-

ment rose to comparably high levels, according to John McTague, the University's vice president for Laboratory Management.

McTague spoke to a San Francisco meeting of the UC Board of Regents. It was his first report

See **MCTAGUE**, page 8

Overall Lab cancer rates lower than Bay Area norms, surveillance report finds

Considerably less cancer was found among Lab employees than would be expected based on Bay Area rates, according to the findings in the Health Services Department's Cancer Surveillance Project. The project reports cancer rates among LLNL employees.

Drs. Jim Seward and Mort Mendelsohn of the Lab, and Don Whorton, a private physician and epidemiologist, presented the findings to Lab employees Wednesday. Mendelsohn also provided an update on his mortality rate study, which was originally released in March.

"Healthy lifestyle patterns and cancer screening activities are probably important contributors to the observed low cancer rates," said Seward, director of Health Services.

The results of the current project indicate very low rates of invasive cancers for both men and women at LLNL. Among men, there are very low rates for several types of cancer including oral cancer, lung cancer, gastrointestinal cancer and lymphomas. Among women, rates of genital tract cancers, including cervical cancer, were particularly low.

For more than 20 other types of cancers, rates were below or similar to those expected for the general population. Breast and prostate cancer rates were very close to the expected levels. Two cancers that were elevated among LLNL men included testicular cancer and melanoma, although the melanoma rates have become normal in recent years.

The report is a follow-up to a 1985 state cancer incidence study showing a statistically signifi-

See **CANCER**, page 6

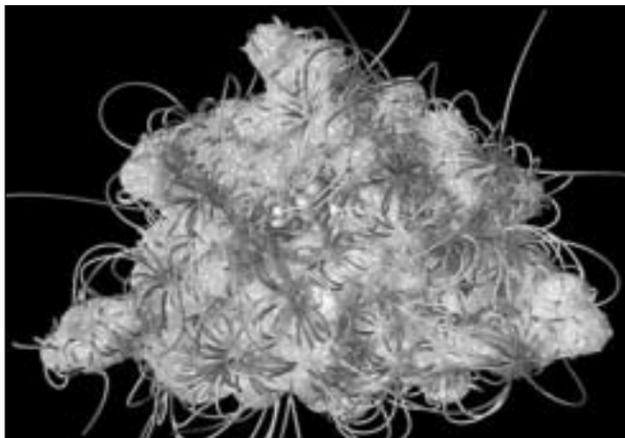
IBM, Lab to work on new design for Blue Gene

NEWSLINE STAFF REPORT

IBM last week announced a partnership with the Department of Energy's National Nuclear Security Agency to expand IBM's Blue Gene research project.

IBM will work with LLNL to jointly design a new supercomputer in the Blue Gene family. Called Blue Gene/L, the machine will be at least 15 times faster, 15 times more power efficient and consume about 50 times less space per computation than today's fastest supercomputers.

Blue Gene/L marks a major expansion of the Blue Gene project. Blue Gene/L is expected to operate at about



This Blue Gene image shows a portion of the surface of the reverse transcriptase enzyme of the HIV-1 virus with a molecular model of an inhibitor drug compound bound to the enzyme's receptor pocket.

200 teraflops (200 trillion operations per second) which is larger than the total computing power of the top 500 supercomputers in the world today.

December 1999.

IBM and the Laboratory have a

See **BLUE**, page 8

Blue Gene/L will also be a part of IBM's research in "autonomic computing," an initiative to design computer systems that are self-healing, self-managing and self-configuring.

The development of Blue Gene/L will take place as part of work under way to build a petaflop-scale (one quadrillion operations per second) machine, as announced in

SAFE to offer advice on protecting intellectual property

By **Jeffrey Morris**
TID

Imagine what would happen if a U.S. company's bread-and-butter technology was stolen by insiders, transferred to another company outside the United States, and used to create a competing product.

Such a scenario isn't difficult to imagine, because it happens all too often. The results? The U.S. company loses market share and sometimes millions of dollars in revenue. Its stock is devalued. Employees are laid off. Retirement plans take a beating.

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breaks ground

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HOME-cooked
reading skills

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LAB COMMUNITY NEWS

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Friday
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Z. Nagin Cox, flight system engineer for NASA at the Jet Propulsion Laboratory, will present **"The Galileo Mission to Jupiter — The Daring**

Return to Io: Moon of Volcanoes and Fire," today from 11:45 a.m. to 1:15 p.m. in the Bldg. 361 auditorium. The LLNL Women's Association is sponsoring the talk. Nagin is currently a flight system engineer on the JPL Mars 2003 Exploration Rover Mission. All employees and contract workers are welcome to attend. For more information, call Marina Gonzalez, 3-7904.

Monday
19

The **South Cafe** will be closed Thanksgiving week beginning Monday, Nov. 19, to Wednesday, Nov. 21. During this period, please take advantage of full cafe menu offerings at both the Central and West Cafes. The South Cafe will reopen on Monday, Nov. 26. Contact: Mishell Pendleton, 2-0105.

Wednesday
21

The Macintosh Technical Seminar Series will be held at 10:30 a.m. in the Bldg. 543 auditorium and feature a presentation on **Mac OS X Security Features and Fundamentals** by John Hurley, manager of Data Security for Apple Computer. Hurley will explore fundamentals of security, explain the Mac OS X security model, and how to use the security features of Mac OS X to make your machine more secure. Many of the security features available in OS X are configurable, and Hurley will describe how to use this to enhance the security of your OS X machine.

Thursday
22

The **Laboratory is closed** Thursday and Friday for the Thanksgiving holiday.

Up
Coming

A kick-off workshop on **"How to Win an R&D 100 Award,"** is scheduled for Dec. 6, at 1:30 p.m. in Bldg. 551W, room 1400.

The presentation will cover the submission criteria, the assistance available through TID, and one of last year's winners sharing how to pull a submission together. A current R&D 100 judge will also be on hand to share his experience and what he looks for when judging submissions. Contact: Darlene Horne, 3-1929.

• • •

Almond Avenue Elementary School is holding its annual **holiday craft fair** on Thursday, Nov. 29, from 2-7 p.m. at the school, 1401 Almond Ave. The fair will feature more than 20 vendors, crafts for kids, toys and books, and homemade baked goods. Vendor spots are still available. Contact: Suzie Sylvia at 606-3350.

Strong support for science Saturday



The Lab's first Space & Science Saturday, held last Saturday by the Public Affairs Office, drew nearly 500 people. Above, a packed auditorium attends a Fun With Science presentation given by Lab scientist Elvis Spencer. Below right, kids line up to make commemorative buttons. Below left, participants check out a wall display in the Visitors Center. Left, young attendees line up to test air-launched rockets at a Chabot Space & Science Center display.

PHOTOS BY SCOTT WILSON/PUBLIC AFFAIRS



Native Americans celebrated

The Affirmative Action & Diversity Program and the American Indian Activity Group are co-sponsoring a number of programs in honor of Native American History Month, which takes place in November.

- A videotape presentation on "Navajo Code Talkers — The Epic Story," will be shown at noon Monday, Nov. 19, in the Bldg. 543 auditorium.

- On Monday, Nov. 26, at noon in the Bldg. 543 auditorium, Navajo code talkers Sam Billison and John Brown will discuss their experiences.

- Special Native American drumming and dancing by All Nations Drum Group will be presented at noon Wednesday, Nov. 28, in the Lab pool area.

- The DOE Native American Indian Energy Forum will be held noon Friday, Nov. 30, in the Bldg. 543 auditorium.

For more information on any of these events, contact Darlene Yazzie, 3-7846.

Newsline

Newsline is published weekly by the Internal Communications Department, Public Affairs Office, Lawrence Livermore National Laboratory (LLNL), for Laboratory employees and retirees.

Contacts:

Managing editor: Lynda Seaver, 3-3103

Contributing writers: Sheri Byrd, 2-2379; Don Johnston, 3-4902; Elizabeth Rajs, 4-5806; David Schwoegler, 2-6900; Anne Stark, 2-9799; Steve Wampler, 3-3107; Gordon Yano, 3-3117. For an extended list of Lab beats and contacts, see <http://www.llnl.gov/llnl/06news/NewsMedia/contact.html>

Designer: Julie Korhummel, 2-9709

Public Affairs Office: L-797 (Trailer 6527), LLNL, P.O. Box 808, Livermore, CA 94551-0808
Telephone: (925) 422-4599; Fax: (925) 422-9291
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AROUND THE LAB



Teller Center touts importance of science education

By Elizabeth Campos Rajs

NEWSLINE STAFF WRITER

As a crowd of more than 60 invited guests looked on, Lab Director Emeritus Edward Teller ceremoniously helped put the first shovel into the ground last Thursday for a new K-12 teacher training center named in his honor.

Wearing a hard hat and a dark suit accented with a flag-inspired tie and his trademark black cowboy boots, Teller talked about the importance of science in the last century and how it can be used to improve lives on a global level in the future, notably through vastly improved weather prediction. But science education will be key to future successes.

In general comments following the groundbreaking, Teller suggested that the addition of the education center will help teachers to better educate students in areas of science and math.

"Science has become so big that people are afraid of it," he said.

Teller was praised during the ceremony as a great scientist, statesman and historical figure.

"Not only will this center symbolize how we're going to do K-12 education, but also how Edward Teller is an inspiration to students," said Barry Klein, vice chancellor of research at UC Davis. "I want to see the center live up to the greatness of the man it is named after."

The Edward Teller Education Center (ETEC) is a collaborative effort between UC Davis, the UC Office of the President, the Laboratory and UC Merced. Its mission is to enhance California's K-12 education by providing professional development in science and math for teachers working with participating



JULIE KORHUMMEL/NEWSLINE

Director Emeritus Edward Teller helped break ground on what will eventually be the Edward Teller Education Center, a new K-12 teacher training facility.

school districts within the greater Livermore Tri-Valley area and the San Joaquin and Sacramento valleys.

"Dr. Teller feels extraordinarily proud to have his name on this center," said Rick Freeman, chairman of the UC Davis Department of Applied Science. "He has been writing about the importance of science and math education since 1965. I hope we can honor him and his memory for the pride he feels about science, education and the labs."

The new facility will be built next to the Department of Applied Science, just outside the Lab's East Gate entrance. The center, which will be housed in a 3,400-square-foot building, will include a wet laboratory classroom and a computer technology and lecture classroom. The

building is expected to be open by March 1.

At the groundbreaking ceremony, Jeff Wadsworth, deputy director for Science and Technology, presented a gift for the new center. It was a poster-sized enlargement of a photo taken in 1959 of two educators visiting the Lab to learn about one of the earliest computers.

"This symbolizes the Lab's scientific depth in computing and the relationship we have had with educators throughout our history," he said. "The Lab will begin its 50th anniversary celebration, and from the Lab's inception in 1952, its history is characterized with our relationship with the University of California. It is very special to us."

Karen Merritt, director of Academic Planning in the

UC Office of the President and representing UC Merced, noted that her campus has not yet broken ground "so I had a little bit of envy this morning."

UC Merced has a strong commitment to partner with UC Davis and Livermore Lab, she said.

"We want to make UC Merced a force in math and science in the San Joaquin Valley," she said. "If you invest in teachers, it shows up in the abilities of their students."

In meeting with educators in the San Joaquin Valley, Merritt said, they have all put improving math and science capability at the top of their lists.

"ETEC has a wonderful role to play," she added.

Fire safety wise



The recent Fire Safety Contest concluded this week with 150 employees receiving smoke alarms and a grand prize winner selected.

Alarms went to the first 150 contestants who correctly identified at least seven of the



JULIE KORHUMMEL/NEWSLINE

Liesl Little receives the Fire Safety Contest's grand prize, a full-sized fire extinguisher, from Capt. Ron Pinto.

fire hazards portrayed in the contest poster. Jim Jackson, head of Hazards Control, randomly drew the grand prize winner from all entries submitted by Nov. 2. The winner is Liesl Little of Electronics Engineering.

The contest poster (above left) was designed to show the 10 most common fire hazards that

employees can cause, according to the LLNL Fire Department. Though some people identified more, the 10 are as follows:

1. Coffee pots left on overnight, or unattended.
2. Cigarettes tossed in bushes or ground cover.
3. Microwave units left on too long or left unattended.
4. Fans/heaters unattended or left on at night.
5. Electrical overloads on multi-outlet power strips.
6. Toasters and other small appliances, such as hot plates, left unattended or on overnight.
7. Paper stacked too close to heater.
8. Flammable liquids not stored in an approved cabinet.
9. BBQ grill too close to tent. (Also note: never put lighter fluid on smoldering coals; and,

when at Lab, be sure to get a permit to use a BBQ grill.)

10. Open flame left unattended.

The contest was part of the Laboratory's ongoing safety awareness effort and was conducted in concert with National Fire Safety Week in October.



THE HOME PAGE

Helping Oakland students cook up literacy skills

By Ali Carrigan

NEWSLINE STAFF WRITER

Terry Girill is teaching Oakland students to read and write with a novel tool: a kitchen recipe.

Girill's "day job" is in the Technical Information Department, where he is also matrixed to the Lab's Computation Division. He has been teaching technical writing to students at Fremont High School in Oakland since September, 2000.

The 11th grade students, members of Fremont's Media Academy, were typically several grade levels behind in reading and writing skills, so Girill, who holds a Ph.D. in philosophy, had his work cut out for him.

"If you think back to your English classes, they were all literature based," Girill said. "But why give these kids another book they won't understand? So a few educators got interested in technical writing as a way to encourage non-literature based writing."

One of those educators was Media Academy director Michael Jackson, who was behind the idea of teaching technical writing from the start.

"I think it's a great augmentation to any class. We're supposed to teach students to read, write and communicate, and most English teachers have no experience with anything but great literature," Jackson said. "But now studies are saying that 90 percent of what students have to read is non-fiction, instructional-type."

The unlikely partnership sprouted when the Society for Technical Communication, of which Girill is a fellow, began promoting technical writing in schools.

"I got in touch with the Oakland School District to see if I could do something with technical writing, and they wanted me to write curriculum, which I knew wouldn't help the kids," Girill explained. "A friend happened to mention this Media Academy at Fremont, and things went from there."

As Girill explained, the Media Academy is "not necessarily composed of students who are interested in a career writing." Instead, it serves as a vocational "hook" to keep students attending classes.

"So on my first visit in the fall, I took a bunch of copies of *Science and Technology Review*, and it was a disaster, because the magazine was way over their heads," Girill laughed. "I learned that I had to bring the technical level down without patronizing the students or being too childish."

Based on this first experience, Girill decided to use recipes on his next trip.

"Recipes are great, because they are an example of step-by-step instructions, and they're fairly gender-neutral — everyone has to eat," he said. "We looked at good recipes and what makes them good, and we looked at



JULIE KORHUMMEL/NEWSLINE

Terry Girill

bad ones and discussed how they could be improved."

Jackson was impressed with Girill's program and preparation.

"His examples involved problem solving and critical thinking. The students had to think about what made things work," Jackson said. "To understand that makes those directions more useful."

Following the first-semester success of the instructional writing program, Girill returned to the Media Academy in the spring to teach the students how to write descriptions.

"I borrowed a lot of diagrams from David Macaulay's book, *The Way Things Work*," to use as examples," Girill said. "A lot of these kids won't grow up to be Ph.D. engineers, but they may grow up to be electricians. If they can read and understand directions and diagrams, that will help them in the long run."

Girill encountered plenty of problems in preparing and presenting the program to the students.

"One of the problems in dealing with technical topics, even something like how a light bulb works, is that most teachers ask 'Where does this fit in?'" Girill said. "Most English teachers won't do technical writing, but Michael (Jackson) was ready to try it." Girill also explained that the atmosphere of the campus drove many people away.

"There's a chain-link fence around the campus, and

the gate is always locked. You have to be checked in to get on campus. But since I work at the Lab, I was used to that," he laughed. Girill noted that most of the students were very well behaved — as long as someone was watching them.

"These kids aren't carrying weapons, but they literally won't work unless you're standing over them," Girill said. "They don't do homework because there's no one standing over them telling them to do it."

After the apparent success of his instructional programs this year, Girill decided to put his materials on the Internet for other teachers to use.

"Michael told me that he could never spend the amount of preparation time on these lessons that I did — he just has too much other work to do," Girill said. "I decided to give him my lesson plans so he could just reuse them, and the Website idea sprang from that."

Girill has actually gone through the California educational standards for reading and writing by grade level, and has earmarked exercises for students that meet these guidelines.

"A lot of people at the Lab have helped me with this project, or are helping me," Girill said. He has been supported in his efforts by both TID and Computation, as well as the Lab's Science and Technology Education Program.

"They were actually kind enough to make this a work assignment, so I can use more of the resources that the Lab offers," Girill said. "One Lab employee, who draws technical diagrams, is helping me get my diagrams up on the Web."

Girill feels the results he has seen among the students has definitely been worth the time he has invested.

"It's an experiment that seems to be working," he said. "These kids will encounter this kind of stuff in the real world, and hopefully this will help them cope with it. It's way ahead of being illiterate."

Jackson agrees that the program seems to be having an effect, noting that "We're probably missing the boat by not offering a full semester of technical writing."

He also noted the importance of industrial partnerships in the public schools, and cited this project as an example of the positive effect they can have on students.

"I don't know where this program could or should go, but wherever it's going, count me in," Jackson said. "It's so important for our students to be involved with other people, and this helps them do that."

The HOME Campaign offers a number of Bay Area charities that promote literacy. For more information, see the booklet of employee chosen agencies and the United Way brochure in the HOME Campaign packet.

HOME contributions to date: \$503,772				
Directorate	Total Employees	No. of Contributions	\$ Donated	% Participation
Energy and Environment	319	66	\$26,688	20%
Computation	981	131	\$62,690	13%
Safety, Security & Environmental Protection	981	195	\$55,898	20%
Physics & Advanced Technologies	393	55	\$18,272	14%
Defense & Nuclear Technologies	400	96	\$43,863	24%
Chemistry & Materials Science	466	81	\$37,062	17%
Laboratory Services	1352	275	\$70,256	20%
Engineering	2066	257	\$87,527	12%
NIF - ICF	191	27	\$8,593	14%
CFO	95	41	\$12,265	43%
NAI	248	70	\$25,125	28%
Director's Office	162	30	\$17,539	19%
Administration	283	63	\$17,614	22%
Biology & Biotechnology Research Program	235	50	\$15,776	21%
Supplemental Labor	0	23	\$3,179	0
Others	9	9	\$1,445	100%
TOTAL	8181	1469	\$503,772	17.98%

HOME incentives



PHOTO COURTESY OF NAI

Glenn Black (left) is one of the latest incentive winners in the HOME Campaign. Roger Werne, campaign chair, officiated the weekly drawing for employees who return their packet by set dates, see <http://www-r.llnl.gov/HOME 2001> for more details.

NEWS OF NOTE



Brashear rises from depths to promote perseverance

By Sheri Byrd

NEWSLINE STAFF WRITER

Just as the movie "Men of Honor," starring Academy Award winners Cuba Gooding, Jr. and Robert De Niro packed theaters, the inspiration for the movie, Navy Master Diver Carl Brashear, packed the Lab's auditorium Tuesday in an appearance celebrating Veterans Day.

"Of the many symbols of patriotism we've seen since Sept. 11, Carl Brashear represents the strength of our armed forces and the strengths of the whole nation," said Tommy Smith, Affirmative Action & Diversity Program Director, when introducing Brashear. "He would not allow our country to be less than it could be."

Brashear went on to entertain and inspire the assembled Lab employees with stories that expanded on the highlights of his story presented in the film.

He recalled his first inquiry into the possibility of attending diving school. "The Navy personnel officer told me they didn't have any colored divers."

The audience applauded soundly after Brashear continued, "Some of you probably remember when we were called colored. Then we went to Negro, then black, but I just want to be called Carl Brashear."

Once admitted to the program, he encountered its intense mental, psychological and physical pressures, and endured even more pressure because of the color of his skin.

Eventually, he said, it was the intense rigors and pressures of diving school that led him to develop "a lot of faith in my fellow divers, regardless of their race, color or creed."

Brashear spent several years as a Navy salvage and demolition diver, and was accepted into First Class Diver school in 1962. However, the limits of his seventh grade education led to a failed first attempt at this goal.

"I decided it was not a sin to get knocked down," he said. "It's a sin to stay down." He said he became more determined than ever to eventually return to deep-sea diving school.

Over the next year, Brashear said he



Carl Brashear and Cuba Gooding, Jr.

"burned a lot of midnight oil" studying physics, medicine, chemistry and all the laws dealing with diving.

His studying served him well. After returning to First Class Diver school in 1963, he graduated third in his class. The class had begun with 30 divers and finished with 17.

In 1966, Brashear suffered the loss of one leg below the knee in a diving accident involving the recovery of nuclear weapons after two Air Force planes collided over the Mediterranean.

Upon arrival at a Navy hospital six hours after the accident, the doctors pronounced him dead on arrival. In one last check in the morgue, a doctor found a faint heartbeat. "So in addition to everything else I've survived," laughed Brashear. "I can say I survived the morgue."

A series of infections made complete reattachment of Brashear's leg impossible. After a long process he requested, against his doc-

tor's wishes, that the leg simply be amputated.

"They didn't want to do that because any doctor could do that, but it would take a really good doctor to save it," he said.

Eventually the doctors agreed, and Brashear began his recovery in August 1966.

"They said it was the end of my career," he said. But after being fitted with a prosthesis in December 1966, he began sneaking out of the hospital and secretly engaging in a rigorous physical training routine.

When Brashear insisted that he could return to full duty, his doctors put him through a grueling battery of physical tests far beyond what was required for naval or even diver duty. "This had never been done before," Brashear said. "They took it very seriously, but had to make up the rules as they went along. And had I been in the doctors' place, I'd have been just as critical as they were."

Through force of will and excellent physical condition, Brashear excelled in all physical training that was required of him by the Navy doctors and dive masters.

He remains to this day the only amputee restored to full Naval duty and qualified Naval diver status. As he was deemed fully qualified, he received no disability status upon his retirement in 1979.

When the movie documenting his career debuted, Brashear was invited to a special screening with President Clinton. "I can honestly say," smiled Brashear, "I made it from the outhouse to the White House."

Brashear said that in looking back over his career, he reminded himself of an old song called, "The Goat." In the song, a farmer mourns his old goat that fell into a well. As he shovels the dirt in to the well, the goat — still living — shakes off each shovelful and packs it beneath his feet until he is able to climb from the well.

Like the goat, Brashear turned tragedy to triumph again and again, shaking off the dirt of discrimination, racism, doubt and disbelief and using all obstacles placed in his path as a source of strength.

Employees wishing to view a videotape of Brashear's talk can contact AADP at 3-2796.

HR implements changes to 'internal only,' flex-term status shift

Human Resources is implementing the following changes to "internal only" postings and to documentation requirements for employees in Flexible Term appointments selected for certain Career Indefinite appointments:

'Internal only' postings now open to flex terms

Under current Laboratory practice, "internal only" postings of Career Indefinite positions limit job application to Career Indefinite employees only. The practice was implemented during a time of restricted hiring and prior to implementation of the Flexible Term appointment category.

The Laboratory is no longer in a restricted hiring mode and in fact is actively seeking qualified candidates for a wide variety of positions. Employees in Flexible Term appointments now comprise a sizeable and skilled portion of the Laboratory's workforce. Employees selected for Flexible Term appointments compete and demonstrate their quali-



cations in the same manner that individuals compete for Indefinite Career positions.

Many Laboratory positions that would otherwise be posted as Indefinite Career appointments are posted as Flexible Term appointments due to uncertain budget conditions.

Finally, employees in Flexible Term appointments represent a considerable Laboratory investment in human capital (security clearances, enhanced job knowledge, supplemental training, and in many cases re-location and hiring bonuses incurred at time of hire).

Consequently, effective immediately, the current Laboratory practice of only allowing employees in Career Indefinite appointments the opportunity to apply for "internal only" postings will be expanded to include employees in Flexible Term appointments. This change will allow hiring organizations to con-

sider additional potentially qualified applicants without opening up recruitment to external candidates.

In accordance with current guidelines, the hiring organizations may continue to utilize "internal only" postings when there is a sufficient feeder applicant pool within the Laboratory to make a meaningful selection decision.

Flexible Term selection process documentation change

When a Flexible Term employee competes for a posted position that would result in a status change to Career Indefinite but no corresponding change in job duties or salary, the hire packet can be streamlined to include a Request to Hire Form, a copy of the Personnel Requisition, the employee's resume and a Personnel Action Form. This change is also effective immediately.

If you have any questions about these new hiring practice changes, contact Marina Gonzalez, Recruiting and Employment group leader at gonzalez8@l1nl.gov or 3-7904.



NEWS YOU CAN USE

CANCER

Continued from page 1

cant number of malignant melanoma — skin cancer — cases among LLNL employees from 1969-80. The total melanomas at LLNL over the 1974-97 period remain high (84 actual vs. 54 expected). However, the results of the project indicate that, despite elevations in the '70s and early '80s, LLNL's melanoma rate has dropped since that time.

"LLNL melanoma rates are now similar to the Bay Area rates," said Seward, "and this is due in part to our educational campaigns focusing on sun protection and the Lab's Mole Patrol screening program."

There have been several studies to look for workplace causes for melanoma at LLNL, but there has been no consistent finding relating the melanomas to any exposure on-site. Analyses have consistently supported the association with personal characteristics (mole count, body coloring and solar sensitivity).

The Cancer Surveillance Project is an initiative to understand the occurrence of different types of cancer among employees. With funding from the DOE Office of Health Programs, the Laboratory hired Dr. Whorton to do the cancer analysis. In addition to updating information on the occurrence of melanoma, Health Services initiated the project as a means for developing targeted cancer prevention and early detection programs.

The report covers the 24-year time period of 1974-97 (the last year information was available), in which 637 out of 17,785 LLNL employees were diagnosed with cancer. Of the 637 cases of either invasive or in situ (surface-level only) cancers reported, 437 were in males, 200 were in females. The statistics from the survey

were broken down by type of cancer, by year, by age and by gender.

The project shows a statistically significant higher incidence rate in testicular cancer, with 21 observed cases during the 24-year period, while the expected number was only 10 cases. Seward indicated that this finding is not surprising, since research on testicular cancer has consistently indicated that professional and white collar workers have a 1.5-2.5 times increased risk for this cancer. The reason for the socio-economic distribution in testicular cancers is not known, but it points to probable lifestyle factors rather than occupational ones. Health Services plans to investigate the options to learn more about the 21 LLNL cases that have occurred since 1974.

Due to confidentiality protections, HSD does not know the identity or the occupations of the LLNL cases.

Testicular cancer is a cancer usually found in males between 25 and 34 years. Other risk factors for this cancer include un-descended testicles, prenatal exposure to prescribed estrogens, and chromosomal disorders.

"Employee anonymity in the report was preserved in the way the data was gathered," Seward explained.

LLNL provided the California Cancer Registry (CCR) a computer file containing names of 17,785 employees who worked for at least six consecutive months from 1974-97. (Supplemental labor information was unavailable.) The CCR then matched those names with any cancer reported to them during that time period and provided the data without names or other identifiers. The CCR did not release any data on cancers with less than six cases.

The findings of the Cancer Surveillance Project are confirmed by a related study on mor-

tality in LLNL employees and retirees. Mort Mendelsohn and Dan Moore summarized their mortality study in the March 16 edition of *Newsline* (see the Web at: <http://www.llnl.gov/llnl/06news/NewsReleases/2001/NR-01-03-08.html>). They found reductions in cancer mortality that were almost identical to those seen in the incidence work.

Likewise, they found striking reductions of all causes of death (below 50 percent of U.S. levels) and of many specific causes, such as circulatory mortality (at 40 percent of U.S. levels). In calculations done subsequently, they estimate for the years of the study, 1984-1996, that Laboratory workers and retirees had five years of added life expectancy compared to the U.S. population.

"These are very striking indications of the good health of our populations," Mendelsohn said.

Employees interested in learning more about the project can access the full report at the HSD Website, <http://www-r.llnl.gov/healthserv/>. The Website also provides information on testicular cancer and HSD's various cancer-screening services. Interested individuals may also contact Jim Seward, 3-6903, or Kathleen Noonan, 3-8999.

This project could not have been completed without help from the following individuals whom HSD thanks for their assistance: Mark Costella, Ed Cunniffe, Marleen Emig, John Futterman, Don Graves, Barbara Kornblum, and Lynda Seaver who participated in the LLNL Employee Advisory Group; Cliff Strader, Bonnie Richter and Heather Stockwell of the DOE Office of Health Programs who provided funding and support; Bob Schlag, Sandy Liu and Bill Wright of the California Cancer Registry; and Joe Bartelt, LLNL Administrative Information Systems.

Technical Meeting Calendar

Friday
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INSTITUTE FOR GEOPHYSICS & PLANETARY PHYSICS

"Galaxy Collisions and Mergers: The Production of Hot Halo Material in Gas-rich

Galaxies," by Nathan Hearn, University of Illinois at Urbana-Champaign. Noon, Bldg. 319, room 205 (open area, badging required). Contact: Joanna Allen, 3-0621.

INSTITUTE FOR SCIENTIFIC COMPUTING RESEARCH

"Modeling Nuclear Contamination in Fractally Fractured Porous Media," by Jim Douglas, Purdue University. 10 a.m., Bldg. 451, room 1025 (uncleared area). Contacts: Jim Jones, 3-5194, or Leslie Bills, 3-8927

INSTITUTE FOR SCIENTIFIC COMPUTING RESEARCH

"Stochastic Multiresolution Models for Turbulence," by Brandon Whitcher, National Center for Atmospheric Research. 2 p.m., Bldg. 451, room 1025 (uncleared area). Contacts: Imola Fodor, 4-5420, or Leslie Bills, 3-8927.

H DIVISION

"External Control of DNA Hybridization and Enzyme Activity Via Covalently Attached Nanocrystal Antennas," by Kimberly Hamad, MIT. 10 a.m., Bldg. 219, room 163 (open

area, badge required). Contacts: Giulia Galli, 3-4223, or Darlene Klein, 4-4844.

Monday
19

DEPARTMENT OF APPLIED SCIENCE

"UV-Shifted Durable Silver Coating for Astronomical Mirrors," by Norman Thomas. 3 p.m., Bldg. 661 (Hertz Hall), room 7 (open area). Refreshments served at 2:30 p.m. for a "meet the speaker" session before seminar and at 4 p.m. after the seminar. Contact: Estelle Miller, 2-9787.

Tuesday
20

CHEMISTRY & MATERIALS SCIENCE

Please note this meeting has been cancelled. "The Materials and Chemistry of NIF," by Steve Payne, discussing the future high-power lasers. Contacts: Tomás Díaz de la Rubia, 2-6714, or Lisa Rose-Webb, 2-5609.

Wednesday
21

SYSTEMS & NETWORK DEPARTMENT

Macintosh Technical Seminar Series. A presentation on Mac OS X security features and fundamentals, by John Hurley, Apple Computer. 10:30 a.m., Bldg. 543 auditorium. Contact: Janet S. Conrad, 2-7561.

Wednesday
28

NAI

"Using the Global System Dynamics Model," by Vic Reis, SAIC, 9 a.m., Bldg. 123 auditorium (uncleared area). Contact

Sandra Hadley, 2-1875.

Thursday
29

INSTITUTE FOR SCIENTIFIC COMPUTING RESEARCH

"A Streaming Supercomputer," by William Dally and Patrick Hanrahan, Stanford University.

10 a.m., Bldg. 451, room 1025 (uncleared area). Contacts: Dick Watson, 2-9216, or Leslie Bills, 3-8927.

Friday
30

INSTITUTE FOR GEOPHYSICS & PLANETARY PHYSICS

"Supernovae, Dark Energy, and the Accelerating Universe — What Next?" by Saul Perlmutter,

LBNL. Contacts: Adam Stanford, 3-6013, or Joanna Allen, 3-0621.

INSTITUTE FOR SCIENTIFIC COMPUTING RESEARCH

"Using Hardware Monitors to Measure the Cache Eviction Behavior of Application Data Structures," by Bryan Buck, University of Maryland. 10:30 a.m., Bldg. 451, room 1025. Contacts: Bronis de Supinski, 2-1062, or Leslie Bills, 3-8927.

The deadline for the next calendar is **Wednesday, Noon, Nov. 28. Newsline will not be published on Friday, Nov. 23.**



CLASSIFIED ADS

See complete classified ad listings at
<https://www.ais.llnl.gov/newsline/ads/>

AUTOMOBILES

1988 - Acura Legend, Runs good, 164k miles, needs new brakes, \$1800 OBO 925-240-6237

1990 - Acura Integra LS 168K miles, 5 spd, air. All pwr. CD player, new trans, clutch and brakes. Excellent condition-runs great! \$3650.00 OBO 925-449-0838

1991 - Honda EX Wagon, loaded, new timing belt, recent smog, good condition 172K mi. \$5000.00 925-447-4406

1986 - Suburban Sierra Classic \$4500 OBO 925-679-8283

1990 - Nissan 300ZX 2+2 Daily commuter, all the optional equipment, runs good. \$6000 209-824-7750

1984 - Audi 5000 sedan silver 60,000 mi runs well. Good for commute or teenager. \$1,000 925-820-5807

1995 - Nissan Quest GXE 51K, like new, all leather, CD player, moon roof, tow package, new tires \$10,000. 925-743-1758

1993 - 1993 Ford Taurus LX wagon, 3.8L, good condition, power everything, leather interior, 77K miles. \$4300/OBO. 209-835-8976

1991 - Dodge Dynasty LE V6 A/T, A/C, C/C, AM/FM, tilt wheel power steering door locks and windows asking \$2,500 925-606-9847

1989 - Red Camaro RS, V6, Detachable face CD-Player, Alarm, passed smog 11/09/01. Good cond, runs great, \$1500 OBO 925-469-1379

1991 - Geo Metro, 48,000 miles, Automatic, Great Condition, Great Mileage, Great Commute Car. Red Outside/Grey Int. \$1,300.00 510-351-4253

1997 - Volvo 960 Wagon, 61K miles, white, excellent condition, single owner, nonsmoker, dual power leather seats, moonroof/sunroof. Asking \$15800. 925-253-0498

1989 - Pontiac Bonneville LE, 177000K, ps/pb, ac, AM/FM cas, power wind&door, new start&alt&bat, Great 3.8 ltr. eng&trans, \$1950 OBO 925-829-1794

1989 - Cadillac Coupe deVille. Showroom clean, 51,500 miles. Xcellent mechanical condition, leather interior. 4.5 Liter V-8. \$6500. 925-455-4394

1998 - Ford Expedition XLT 5.4 L engine, towing package, third seat, excellent condition \$20,000/obo 925-443-0499

1987 - Honda Civic 4D Sedan, 5 speed, Original owner, Good condition, Runs great, 40 mi/gal hwy, \$1800/OBO 925-294-8990

1996 - Ford Mustang, V6, 5 speed. AM/FM/CD/CC/AC/TILT, Power Pkg., Sun roof, rear spoiler. 80,000 miles. Must Sell \$7,900 or best offer. 925-447-1218

1995 - Cutlass Supreme exterior and interior/excellent condition. New transmission, all power, Pioneer stereo system \$9,000 OBO 925-449-2172

1985 - Mazda RX-7, GSL/SE. 5-spd, AC, cruise, flip top, all leather, new stereo. Runs great, 126K. Asking 4k/obo 925-447-3283

1993 - Ford Taurus GL Sedan. 3.8 Liter, air, power everything, 130k, looks/runs great. Priced to go at 1/2 blue book: \$1600. 925-454-0640

1996 - Blazer S-10 4WD 4DR 67K miles, very good cond, power everything, overhead console, cloth interior \$11,000 obo 925-606-0755

1986 - Chevy S10 Blazer 4x4, Sport Ed, 153K m, PW, PL, AT, runs, as is \$3200 OBO 925-447-1159

1996 - Plymouth Voyager Van Rallye SE, 97K miles, 3K remaining on 100K warranty. Excellent cond. 7 Passenger, 5 door, one owner. \$9,300. 925-443-6872

1995 - Acura Integra RS Sport Coupe, 4 cyl. 1.8 liter, 5-spd, FWD, A/C, PS, PW, PDL, TW, CC, AM/FM Cassette, Blk. Very Good condition. \$8200 obo. 209-544-8504

1965 - VW Camper Van - Safari window conversion kit still in box, side tent, needs some body work, recently rebuilt engine runs great. \$900. 925-443-1547

1991 - NISSAN Maxima 4 DR Power

windows, Locks, Mirrors, CC, 112K MILES, Runs Great Engine Well Maint. Clear Coat Peeling 3000.00 925-443-5008

1990 - Honda acd.ex. (4-door) great condition. 173,000 loaded! 4,450, or B.O. Eve...Mon - Thursday. 925-846-4661

1988 - 88 Honda accord, 4 dr, auto, 148K miles. \$3000/ OFFER 209-368-4286

1973 - Oldsmobile Toronado Classic. One owner. Always garaged. 142K mi. Excellent Condition. Must see to believe. \$2950. 925-447-9969

1991 - Ford T-Bird, V6, Good Condit., rebuilt trans., new A/C compressor, water pump, radiator. CD-changer, tinted windows, viper alarm. \$4,400 o.b.o. 925-454-9085

AUTOMOBILE ACCESSORIES

Diamond plate bed rail protectors for Ford F-series trucks with 6 foot bed. Never used, \$40 925-484-4099

1988 Ford Escort, White, 4Dr/hatchback, very good condition, low miles, C/D, Am/Fm, A/C, A/T, P/S \$1550/ OBO. 925-447-0083

BICYCLES

Stamina Air Bike Model 890 \$50.00 925-606-9847

BOATS

19 ft. Sea Ray bowrider w/ trlr. In great cond! New canvas top, tires/whls on trlr, mechanic-inspected/maintained. \$3,500. 209-610-5732 (cell). 209-832-2790

Klamath 12ft boat with cover, 99 15hp Mariner, Minn-kota trolling motor w/battery, trailer w/spare. Low hrs, exc. cond, loads of extras \$2250 925-443-7408

MINN Kota Electric Trolling Motor. 3HP Used 5 Times \$100.00 925-676-4966

1981 Hobie Cat 16ft., good condition w/ trailer. Orange w/yellow, brown, red sails. Trapeze, ice chest, feather tail. \$800.00 o.b.o. 925-454-9085

ELECTRONIC EQUIPMENT

Bose AM5 speakers. Subwoofer with two twin satellite speakers. White. Good condition \$200 After 6 925-240-5784

Power Mac, Performa 5200, Complete system, all in one Monitor and Hard Drive. Learning Games and World Book Encyclopedia. \$125/OBO. 925-833-8339

Nintendo 64 games. Yoshis Story, Cruis N USA, Wave Race, Triple Play 2000, Star Wars, Toy Story 2, Superman, Hybrid Heaven, \$25.00 each. 925-606-7262

SHARP-YO520 Electronic organizer pocket size Comes with PC. ssoftware that lets you download to organizer asking \$50. 209-521-4846

GIVEAWAY

Mountain bike, Trek 850; frame, wheels, 2 sets tires. All in good shape. Missing a few de-rail. parts. All or nothing goes. 925-606-1216

2-Female Yorkshire Terriers. 3 yrs & 7 yrs., fun, loving dogs. AKC papered: Free to good home. 925-634-3909

HOUSEHOLD

22 cuft side by side white GE Refrigerator/Freezer. Ice and Water in door. 5 yrs new. \$350 925-240-5784

OLEANDER plants 1 gal pots, 12 to 15 inch tall, 8 avail, \$15 take all. 925-447-6192

Solid oak bar w/brass footrail. Top contains card table w/ removable protective glass. Plenty of storage behind. \$700. NEW! Can email pictures. 925-756-2253

Entertainment center, three piece, white with glass doors brass trim. excellent condition \$150 925-371-1465

(2) Matching loveseats in great condition, \$300 OBO. (1) Wood trundle bed with (2) mattresses in good condition, \$200 OBO. 925-449-4947

Jenny Lind cradle with bedding set and three extra sheets. Bedding set is white, cradle is dark wood. Great condition. \$ 65.00 OBO 925-625-0290

Wicker furniture set: love seat, coffee table, 2 chairs, matching throw rug. Pink/blue trim with floral cushions, new condition. \$350. 925-456-5848

Macys Jonathan Louis chair and 1/2 w/ottoman sage color almost new \$450. Cherry topped kitchen table, 6 chairs, and rustic green hutch \$1000. 925-518-9469

White sofa with teal loose-back cushions. Excellent condition but does not fit new house \$150/OO 209-786-5967

Office desk, grey steel, 30 x 60 x 29 inches high, one file drawer, \$80. 925-454-9291

Lazy Boy rocker/recliner. Excel cond. Neutral colors. \$75/obo. 925-449-7570

Firewood, Almond and Walnut, So. Tracy area, pager 209-469-1487. 209-836-4690

Amana Refrigerator, 22 cu ft., bottom freezer, almond color, works great. \$400 or BO. 925-838-0546

Futon. Full-size extra thick futon with cover and neutral oak frame. \$120. 510-338-0237

LOST & FOUND

Found Photos & Negatives of family party (7-4-00). Found at 5th and L st. in Livermore in August 2001. 925-443-5524

LOST: Rayban Aviator sunglasses near Lab pool area on 11/5. 925-449-2230

MISCELLANEOUS

Garage Sale, Sat., Nov 17, 7 a.m to 12 noon, no early birds! Great stuff...furniture, toys, boys clothes, bikes, lawn border, hot wheels jeep, drapes. 835 Dana Circle, Livermore. Just off Mines Road.

New barber set \$15, Sears heavyduty sander (\$70), scroll saw (\$70), or best offer. 925-292-7799

Holiday Craft Fair! Thurs, Nov. 29, 2:00-7:00 pm. Almond Ave School, 1401 Almond Ave. Gifts, make-n-take crafts for kids, baked goods, and MORE! 925-455-5273. Vendor spots still avail: call 606-3350.

15 Gal. Water drum, blue food grade plastic, \$25. 925-245-4570

Model Railroading N and HO gauge trains, Atlas and Rivenassi. Buildings, track and misc. stuff all for \$235 obo 925-634-2701

Wanted: area to dump dirt and sod. 925-447-4961

CALLA LILY, 1 gal pots, have 6 ea for \$10. 925-447-6192

GARAGE/MOVING SALE rain or shine Fri & Sat 11/16 & 11/17, 9:00 - 2:00, 539 Shelley Street, Livermore. Household goods, etc. 925-606-1839

Blood Pressure Tester. Marshall brand with analog gauge and stethoscope. Great condition. \$15. 408-930-6175

Fencing. Over 60 metal, farm fence posts 5ft? tall, 4x4 square fencing 100 feet or more. \$300 or best offer. 925-455-6847

Macys Jonathan Louis chair and 1/2 w/ottoman sage color almost new \$450. Cherry topped kitchen table 6 chairs w/rustic green hutch \$1,000. 925-518-9469

Tools: Ryobi RA-200 Radial Arm Saw like new w/stand \$175 obo. Stanley Palm Nailer, new in box \$75. Shopsmith running, missing saw guard \$250 510-538-1659

Donated medical supplies and equipment will be sent to Red Cross hospitals in Torreon, Mexico. Tax receipt avail. 925-447-7394

29 light gray keyhole-shaped concrete/stone pavers, 50 cents each. 925-516-9529

Free-standing Fireplace. Metal 1970s orange spherical model. Replaced by a pellet stove. \$100. 510-338-0237

MOTORCYCLES

1980 - Honda XR 80 - good condition. Perfect childs beginner bike, easy to

start. Dirt bike. Happy holidays. \$600 OBO. 925-373-9128

1996 - Harley RoadKing lots of extras only 9K. miles Mint Cond. \$16,500 510-357-3995

MUSIC INSTRUMENTS

Suzuki violin, 1/4 size, Wolf violin head-rest (1/2 size), Violin Strings, all like new. 925-292-7799

Banjo, Gibson RB4, with case, strap, music videos and books. \$1850 925-634-2701

Piano, Chickering & Sons, Upright Exc. Cond. Oak With Bench \$875.00/O.B.O. 209-835-7149

PETS & SUPPLIES

Black Lab: 3 years; spaded; Great Family Dog; needs room to run, Free to good home. 925-634-3909

Half Pixi-Bob Kitten, Male, 1/2 Tail, Ear Tips, Very Social & Loves Children. \$135 209-835-4281

75 gallon Aquarium, Magnum filter, Fish and Stand \$250.00 best offer 209-234-2314

Two beautiful cats. Love each other and humans. Very young but nearly full grown. Neutered and have had shots. FREE. 925-455-1747

WANTED: older western mare to lease or possibly purchase. Must be suitable for 7 yr old to show walk/jog in Arabian Shows. References available. 209-847-1231

RECREATION EQUIPMENT

Ab-Doer exercise equipment. Almost new - in excellent condition! \$65/obo. 209-832-2790

RIFLE SCOPE: Simmons 44mag, 3-10 44mm, Leupold BR 24X 40mm AO, crosshair, gloss finish, sunshade, Warne rings, target knobs, new, never used, offer 925-634-2307

Skis, Mens Rossignol with poles, good condition - \$65. Size 11 Mura ski boots, \$50. Ladies Kneissel 150 skis + poles, \$60. Boots 8.5 M, \$50. 925-447-8415

RIDESHARING

Express your commute, call 2-RIDE for more information or visit <http://www.llnl.gov/tsmp>

Orinda-Lafayette - Lamorinda Carpool (St. Stephens exit on Hwy 24)--1 additional driver/ rider sought. Arrive LLNL 8:15am, leave 5pm. 925-253-0498, ext. 2-9823

Manteca - 1 additional rider/driver needed. Arrive LLNL 7:45AM, leave 4:30PM. 209-823-5085, ext. 2-0643

Lafayette - LaMorinda (also Walnut Creek stop at Rudgear Rd) luxury Vanpool (reclining seats, reading lights) 8-4:45, \$105/mo (pretax reduction available) 925-943-6701, ext. 2-3005

Cupertino/San Jose - Looking for a vanpool/carpool 8:00 - 4:45. Possible flexibility in hrs. 408-787-9992, ext. 4-4527

SERVICES

Roofing, 28 yrs experience, fully insured, free estimates 925-454-9200

House-Painting- Interior & Exterior, 10% fall special w/free estimates. 925-447-5132

Wedding Photography: 20 years exp. Very reasonable prices and you keep the negatives. Medium format cameras used. Book now for 02. 925-829-1474

TUTORING in high school and college chemistry and math. 925-443-2095

FLOORING- Carpet, linoleum, stone, tile. All work guaranteed, reasonable rates. Licensed/bonded/insured. 925-516-9510

Tree Trimming Service. 13 years Experience. Best Rate in Town. Free Estimate. 925-292-4751

SHARED HOUSING

Livermore - Room in 3brm/2ba home-

shared bath, \$550 month + 1/3 utilities. Great location, quiet, clean and comfortable for the right person. Pref. female, N/P, N/P. 925-371-2712

TRUCKS & TRAILERS

1985 - Chevy Suburban, needs some mechanical & cosmetic work, restoration in progress. Sacrifice at \$1500. 925-447-5132

1990 - Ford F-250 Extended Cab P/U, XLT Lariat, Diesel Eng w/Banks Power Pack, extras, runs strong. \$6250.00 OBO, 209-946-0645

1975 - 26 ft. motorhome - Roll Along. Stored inside. Very good condition. Priced reasonably. 925-447-3281

1995 - Dodge Ram 4x4, excellent condition, original owner, white, shell, tow package, 160,000 miles, \$9,900 or best offer 209-239-0148

1992 - FORD F250 Truck. New tires/wheels, paint, campershell, bedliner & more! Over \$5k of new stuff! \$6,500. 209-832-2790

1995 - Ford Explorer Sport. Excellent condition. Tow package, ABS, cassette, privacy glass, all power. New tires. Asking blue book price. 7,850.00 obo 510-537-7222

1992 - Chevy 454SS. 90,000 miles. AM/FM/CAS, AC, PWR/bedliner, rear slider. Black, lowered. Needs a little work. \$6,500 obo. 925-373-4888

2001 - TIRES & RIMS - 4 new (300 miles) BF Goodrich Rugged Trail T/A P265/70 R16 111S M&S Tires & Rims from 2001 Toyota Tundra, 6 Lugs. \$200.00 or BO. 925-485-9148

1987 - Toyota 4Runner, 5sp, 4X4, A/C, cruise, tilt, AM/FM/Cassette, new exhaust system, alternator & battery, w/ Yakima racks. One owner. \$5000. 925-462-1554

1996 - Dodge Ram 2500 SLT/HD V-10 Long Bed, Club Cab 104,000. Mi. Perfect Condition and Loaded with Extras. Original Owner asking \$10,450. 209-962-7431

1995 - 34ft Dutch Star with slide Motorhome by Newmar Loaded Like New 20,000 miles Extended Warranty Asking \$51,000 925-634-4959

1997 - Ram 1500SLT 5.9 4x4 x-cab w/s.b.126k, 26k on re-built A/T good 265/75R, options galore cliff.alarm & nerf bars Flame Red 925-606-5669

1996 - NOMAD 27ft dlx 5thWheel w/slideout, AC, awn, loaded, elec jacks, exc cond. \$16,500 209-847-8264

Hiding load hooks for Ford trucks \$30, Bed rail protectors for F-series trucks with 6 foot bed, still in the box, \$40 925-484-4099

VACATION RENTALS

Maui, HI - Kahana Reef oceanfront 1BR/1BA condominium. Beautiful two-island view, oceanside pool, and BBQs. Low LLNL rates for year-round reservations. 925-449-0761

SOUTH LAKE TAHOE - 3 Bedroom 2 Bath Chalet, nicely furnished, all amenities, close to all skiing. Off-season Rates! Reserve Holidays/Skiing Now! 209-599-4644

South Lake Tahoe, 1800 sqft. Heavenly Valley condo: 2 min. walk to lifts, sleeps 8, 2.5 bathrooms, laundry, available 1/26-2/2. Call after 6pm. 925-447-8144

WANTED

Childs quad (4-wheel motorcycle), 50 - 70cc in very good cond. prefer Honda; will consider others. 209-823-8566

Artist seeking unwanted bowling balls. 925-447-4763

Unimat Vise and Milling Table or will buy complete machine. 925-449-3737

Mac Powerbook G3 for word processing, websurfing, media playing. Screen/case good condition, drives functional. Upgrading? Defer \$\$\$ \$500-\$900. 925-447-5337

I am a student looking for a 4 door automatic honda accord, around 92, with around 100k miles. 209-368-4286

MCTAGUE

Continued from page 1

to the Regents since joining the University last June.

In the past year, Lawrence Livermore, Lawrence Berkeley and Los Alamos national laboratories, transcended "a small number of very high profile" problems in security and project management that bedeviled them in 1999 and 2000 to experience "one of the best years ever," McTague said.

McTague said that one of the most notable and instructive highlights of the laboratories' performance has been their ability to respond to the Sept. 11 attacks by providing useful science, technology and analysis to authorities almost instantly.

"You can't respond effectively to a crisis if you only start preparing when the crisis occurs," he said. "For years, these laboratories were getting ready for things that the rest of us haven't been thinking about. Their contributions are a dramatic illustration of the importance of doing research before applications become urgent."

He was referring in part to the well publicized efforts by Los Alamos and Livermore to help health and law enforcement authorities identify anthrax contamination. As an example of one of the powerful new technologies now in use, he held up for the Regents a prototype of one of Livermore's portable bio-detectors, called HANAA (for Handheld Advanced Nucleic Acid Analyzer.) HANAA, now licensed for commercial development and not much bigger than a man's shoe, can identify a microorganism in 20 minutes.

But he also pointed out a range of other post-Sept.

11 activities — all of which originated long before the World Trade Center Attacks. These include airborne biodetection systems, models for identifying and protecting vulnerabilities in gas lines, electrical grids and other parts of the infrastructure, and R&D into airport security and cyber security.

Impressive as they are, the labs' responses to the Sept. 11 attacks are only a part of the year's activities. McTague pointed out the following highlights:

- Los Alamos and Livermore were able to certify, for the first time since the end of nuclear testing a decade ago, the reliability and safety of significantly modified warheads. In the past, significant modifications required testing, and the achievement reflects greatly increased confidence in the power of computer simulations supported by sophisticated non-nuclear tests.

- Livermore dedicated the world's most powerful computer facility, ASCI-White, which runs at better than 12 trillion operations per second. As part of now-routine collaboration between the national security labs, Los Alamos researchers have used the Livermore facility for the first full-physics, primary and secondary nuclear weapon simulation. This has illustrated the value of the UC labs operating cooperatively as a system.

- Berkeley Lab dedicated what was for a time the world's most powerful (and is now the second most powerful) unclassified computer facility — NERSC, for National Energy Research Scientific Computing Center, serving more than 2,400 users around the country with reliable, high quality computations at 5 trillion operations per second.

- Berkeley Lab obtained atomic images of columns

of silicon atoms at unprecedented resolution using an electron microscope. Resolution was 0.078 billionths of a meter (0.78 Angstroms) — less than the diameter of many atoms.

- Working together, at DOE's Joint Genome Institute in Walnut Creek, the three labs have developed the world's fastest approach to sequencing genomes. They are paying particular attention to microbial genomes, turning out in some cases a draft sequence in a single day.

McTague's presentation came 10 months after the contracts for LLNL and LANL were extended by the Regents and by NNSA. (The Berkeley Lab contract remains in force through next fall.) He noted that management improvements have been especially gratifying. There have been no major security incidents or safety stand-downs. Environment, safety and health performance, as measured by lost or restricted workdays, has improved steadily for all three labs until they are now better than DOE averages and targets. Employee surveys at the two national security labs show that the vast majority of Livermore and Los Alamos employees believe their workplaces are safe, their management values diversity and they are proud to be associated with their lab.

The one negative, he said, was a significant concern by Los Alamos employees, who detect a decline in productivity due to the imposition of regulations that restrict but do not add value to an operation. "It is time to return to performance based management," he told the Regents. "Our sponsors should specify what needs to be done, and we should be the experts in how to do it."

SAFE

Continued from page 1

Sometimes the company is forced to close its doors.

In an upcoming presentation, Robert Cleary, the U.S. Attorney for New Jersey, will lay on the line what can happen when intellectual property is stolen, and why people working at a national laboratory should be concerned.

His presentation also will include steps you can take to prevent the theft of intellectual property. Cleary will talk about how the criminal justice system deals with those who steal intellectual property and, in doing so, create havoc within the U.S. economy.

Cleary will present "Protecting Intellectual Property, What Have You Got To Lose?" at 10 a.m. Tuesday, Dec. 4, in the Bldg. 123 auditorium. Security Awareness For Employees (SAFE) program is hosting the talk.

All LLNL and Sandia employees and contractors and DOE personnel are invited to attend this unclassified presentation.

"Everyone at the Laboratory who is involved with intellectual property development or intellectual property issues has something to be gained from hearing this presentation," said Terry Turchie, SAFE Program manager.

Cleary is a subject matter expert. He successfully prosecuted three people, including two employees, who conspired to steal highly successful Internet voice

and data communication technology from Lucent Technologies, Inc., to use it to form their own company, then to transfer the source code and software out of the U.S. to their home country.

"As prosecutor of the Lucent Technologies case, Bob is on the front lines of the battle to combat economic espionage and to protect intellectual property," Turchie said.

Cleary is currently coordinating the investigation of the mailing of anthrax to lawmakers' offices in Washington. He was the lead prosecutor for the UNABOM case, and pursued recent allegations of corruption in the sport of boxing.

"I think people will find Cleary's presentation to be frank, highly descriptive, and very effective," Turchie said.

BLUE

Continued from page 1

long history of working together on supercomputing projects, most significantly on the Accelerated Strategic Computing Initiative (ASCI) Program. IBM built the "ASCI White" machine for the Laboratory, which is the world's current record-breaking supercomputer.

"Our initial exploration made us realize we can expand our Blue Gene project to deliver more commercially viable architectures for a broad customer set, and still accomplish our original goal of protein science simulations," said Mark Dean, vice president of systems, IBM Research. "Partnering with Lawrence Livermore is a key part of our strategy, as they bring important application and design expertise to the project."

Researchers at the national laboratories plan to use Blue Gene/L, which is expected to be completed by 2005, to simulate physical phenomena of national interest — such as aging of materials, fires, and explosions — that require computational capability much greater than presently available.

"This represents a new thrust, very different from the approach taken by the main line of ASCI machines. Up until now, ASCI supercomputers have been designed to address the entire spectrum of numerical simulations required of the stockpile stewardship effort," said David Nowak, ASCI Program Leader at LLNL. "This new Blue Gene/L innovation can address an important subset of those computational problems, those that can be easily divided to run on many tens of thousands of processors."

"Examples of those applications include the modeling of the aging and properties of materials, and the modeling of turbulence," added Nowak. "This technology opens the door to a number of applications of great interest to civilian industry and business, like biology and other life sciences. The future

of U.S. high-performance computing will benefit tremendously from pursuing both of these paths in parallel."

New architecture for supercomputers

While today's machines are amazingly fast number crunchers, many data-intensive applications are slowed because of the time it takes to simply access information from the memory chips. The Blue Gene/L design will run these applications much faster because the machine will be populated with data-chip cells optimized for data access. Each chip includes two processors: one for computing and one for communicating, and its own on-board memory. Each of the data-chip cells will work on a small part of a larger problem. This increase in data access speed will make a huge difference in the kinds of results these machines can produce and the kinds of problems they can solve.

NNSA's Bill Reed, ASCI's national program leader, lists an impressive array of projects that can make use of this new approach and cites "the continuing need for cost-effective computing to address important national security issues. We need to run these problems in days not months and we need to simultaneously support many scientists across all three NNSA laboratories working on a broad spectrum of technical issues. The value to both national security programs and commercial interests can be dramatic, especially in the biological sciences and medical and pharmaceutical fields."

IBM and the Laboratory will team up to explore the hardware and software components needed to construct this new computing architecture, and Livermore will provide additional design expertise for the applications that can take advantage of the Blue Gene/L machine.

Lawrence Livermore will get help on the Blue Gene/L project from collaborators at the DOE's

NNSA, Columbia University, San Diego Supercomputing Center, and Caltech.

The ASCI Program at Lawrence Livermore, Los Alamos and Sandia national laboratories has been partnering with the supercomputing industry for the past five years in developing a series of supercomputers for NNSA's Stockpile Stewardship Program. This latest effort continues to build on that experience to help enable the United States to maintain its nuclear stockpile without underground nuclear testing and make unprecedented contributions to many fields of science that rely heavily on computing and simulation.



Newsline
UC-LLNL
PO Box 808, L-797
Livermore, CA 94551-0808